

Is a regulatory copy protection regime needed within the limited sphere of digital broadcast television? I would argue that such a regulatory copy protection scheme is not needed and that it might indeed hinder, rather than promote, the transition to DTV.

A large installed base of DTV-capable devices already exists. These early adopters in general paid a heavy premium for this capability, but served the important role of ironing out problems in early products and paving the way for DTV products to drop in price to where they can begin to move as commodity items. Very few to none of these existing products conform to the BPDG's technical specifications, making the BPDG's claim that there will be no impact to consumers false. Consumers who have paid the premium for DTV-capable devices will be left with hardware they can't use, and under the provisions of the proposed regulation, could be charged as felons for using such equipment to receive protected digital broadcasts. This is a double disincentive; the early adopter consumers (an important market segment with any new technology) will be reluctant to pay the early adopter premium again, and they will also be left with equipment that could conceivably be defined as a "circumvention device" under the terms of the Digital Millennium Copyright Act (DMCA), for which they could be tried in court as felons.

With respect to the technical robustness of the ATSC flag, I make the general argument that any copy protection scheme is breakable and that once broken completely loses its effectiveness. The CSS protection scheme used for DVDs illustrates this. CSS relies on small number of decryption keys distributed to DVD hardware manufacturers, each of which can decrypt the master key under which the digital content of the DVD is encrypted. The discovery of an unprotected manufacturer key in a device and its subsequent publication led to the complete collapse of the effectiveness of the CSS scheme as a content protection mechanism. The scheme could not be changed to close the hole because of the huge installed base of hardware and released DVD content.

If the ATSC scheme is not updateable, then it will fall victim to the very same attack. It will be broken and will cease to be at all effective. If it is updateable, then the most likely mode of attack is the update mechanism itself, since update capability pokes a large hole in the tamper-resistant nature of the hardware. Witness the ease with which satellite and premium cable TV pirates circumvent the various content protection schemes used by the broadcasters.

Copy protection is not used much in the computer software world. Consumers find copy protection to be an impediment, and given the choice between protected and unprotected software, will choose the unprotected software (all other things being equal). Software piracy is common, even of protected software. Yet, with piracy accounting for unrealized sales of many billions of dollars (at least according to software industry trade groups), the software industry is strong and growing. Rampant illegal copying and distribution of software has seemingly done little to harm this market. Software companies have found copy protection to be of little use in protecting their investment, have found that it increases user support calls and

problem reports, and that it is easily circumvented and rendered useless. The same realities apply in the digital television world as well.

Witness the virulent opposition the Motion Picture Association of America put up against the Betamax video tape recorder. They claimed that such hardware would essentially destroy the motion picture industry by making studios reluctant to spend money on movies when they might be copied illegally. Now, some 20 years later, almost everyone with a TV in their home also has a VCR. The movie industry continues to release films costing incredible amounts of money, with no letup in sight, and these films drive a huge video rental industry that pulls in more money for studios than a theatrical release ever will.

The implementation of the broadcast flag and the regulatory copy protection scheme will certainly not provide any incentive to innovation. The content providers arguing most strenuously for the broadcast flag and regulatory enforcement are the very same organizations that argued against numerous innovations in content distribution, such as the player piano, the Edison phonograph, the VCR, the DAT audio tape and the DVD. In each case, content providers argued against the innovation. The content providers are very much interested in the status quo, and only want innovation where they can control it completely, and make more money off it than they make off the current way of doing things. They want to maintain current distribution mechanisms which are little changed from the days of the phonograph. Innovation is the last thing that will result from a regulatory copy protection scheme.

Finally, with respect to consumer impact, I have several arguments. First, as I already stated, implementation of the proposed regulation along with a requirement that DTV devices respect and enforce the broadcast flag will greatly harm early adopters and providers of DTV hardware. Second, the assertion by the BPDG that broadcast flag protection will not interfere with consumer ability to make secure personal copies of content or to send that content to downstream devices is patently false. The nature of the broadcast flag is to interfere with such copying; that is its reason d'etre. In addition, this implies that already existing technologies that do not respect the broadcast flag will become illegal. How can that be conceived of as having no impact on the consumer of such devices? Third, the blanket nature of the proposed regulation makes the development and distribution of general purpose digital devices potentially illegal. A general purpose device can work with any digital media, not just DTV. This implies that *any* digital device will need to embed broadcast flag protection, even if that device has nothing whatsoever to do with DTV.

In the end, it becomes clear that the BPDG has come up with a way of forcing new laws mandating copy protection for *all* digital content without going through the legislative process. They are essentially writing new copyright law in a subversive and potentially unconstitutional way. The CBDTPA proposed legislation by Sen. Hollings faces enormous resistance from consumers and hardware manufacturers alike. The broadcast flag proposal mandates almost the exact same restrictions and yet, due to its going through a regulatory body, does

not have anywhere near the public visibility that proposed acts of Congress have. This should give the FCC clear warning that it is in fact being manipulated into performing a legislative function that, as a regulatory agency, it was never intended to have.